

2 SEPTEMBER 2011

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Photo: BMVIT

# ROPEWAY ENGINEERING STANDARDS AND THEIR REVISION

## Technical specifications for the ropeway industry

Every technical system or product relating to ropeways that is made available on the European Union's internal market<sup>1,2</sup> is subject to certain technical regulations, which are published in the form of directives, standards or codes. Application of such regulations can be discretionary or mandatory.<sup>3</sup>

## What is a standard?

Everyone is familiar with the word "standard". However, the list of usages and definitions of the word in Wikipedia is long. It is therefore meaningful to clarify the semantics with regard to ropeway standards with all their implications. The following two definitions are relevant for ropeway standards:

1. "A standard is a legally recognized, generally applicable regulation drawn up and published in a standardization process with the objective of providing a solution to a certain matter." (German Wikipedia)
2. "A document established by consensus and approved by a recognized body that provides, for common and repeated use, rules, guidelines or characteristics for activities or their results, aimed at the achievement of the optimum degree of order in a given context". (EN 45020:2006<sup>4</sup>)

## Basis of European standardization for the ropeway industry

Annex II of Directive 2000/9/EC of the European Parliament and of the Council of 20 March 2000 relating to cableway installations designed to carry persons lists essential requirements relating to health and safety offering a high standard of protection. The technical details for implementation of these essential requirements are specified in European harmonized standards for cableway installations. In this context the reader is referred to items (13)<sup>5</sup> and (14)<sup>6</sup> of the recital of Directive 2000/9/EC.

## European standardization for the ropeway industry

The effective working of the European internal market is dependent on the existence of European standards. Responsibility for ropeway standards has been assigned to CEN's<sup>7</sup> Technical Committee TC 242<sup>8</sup>. The national member organizations vote on the European standards and, if accepted, implement them. The previously applied national standards or

corresponding national codes must then be withdrawn by the individual member states.

## Harmonized ropeway standards

Harmonized standards are European standards drawn up at the request of the European Commission. The standardization request (mandate) is issued to a European standards organization, which is then responsible for the content of the harmonized standard.

Harmonization of the ropeway standards "Safety requirements for cableway installations designed to carry persons" and "Steel wire ropes" was announced in the European Union's Official Gazette of 4 March 2009 (2009/C51/05)<sup>9</sup>.

Application of these harmonized ropeway standards can be assumed to constitute compliance with the essential requirements of Directive 2000/9/EC.

## Discretionary character of the harmonized ropeway standards

Observance of the harmonized ropeway standards is voluntary; manufacturers may employ the technical solution of their choice as long as it satisfies the essential requirements listed in Annex II of Directive 2000/9/EC.

The standards have the character of recommendations; they are not legally binding in themselves. On the other hand, those who choose to apply these standards have the benefit of recommendations made by official representatives of the industry, which gives them the status of recognized technical rules.

In the case of systems and products engineered in accordance with the harmonized ropeway standards, compliance with the essential requirements listed in Directive 2000/9/EC can be assumed by all concerned.

In those cases where a system or product is not based on the relevant standard, the onus of proof for compliance with the essential requirements rests with the manufacturer.

## Current ropeway standardization activities

Ropeway standards are reviewed every five years to ensure that they reflect the state of the art, and they are updated as required. A poll of the national standards organizations conducted in 2009 showed that all concerned saw a great need for a revision exercise, and at the present time all the European ropeway standards except EN 12408:2004<sup>10</sup> are being revised.

The need for an update does not mean that the ropeway standards were defective in any fundamental way or failed to provide adequate standards of safety. Application of the ropeway standards has shown, however, that a number of provisions are vague or ambiguous, that the effects of some specifications are unrealistic, and that there are significant differences between the texts in the various language versions. We nevertheless owe a great debt of thanks to the authors of the original ropeway standards, especially in view of the time pressures under which they had to operate.

Technical Committee TC 242 has created a total of ten working groups, some of which have been hard at work on the draft revised standards since 2009.

TC 242 has drawn up a schedule for the revision process, with June 2011 set as the date for presentation of the drafts. The latest information received from the individual working groups with regard to progress made to date, however, suggests that this time line is unrealistic. One reason for the delay is the need for agreement between all parties involved in the standardization process<sup>11</sup>, with their different interests and standpoints.

The objections raised and proposals submitted for individual provisions of the standards often reflect commercial interests or traditional views enshrined in earlier national codes. Where they represent an obstacle to the standardization process, they must be refuted with sound arguments based on convincing engineering considerations.

Consensus building among the parties involved is one of the most demanding aspects of the work and often involves long and detailed debate.

### Objectives of ropeway standard revision

The work on revision of the ropeway standards must be guided by the need to

- ensure a balance of interests between all parties and avoid negative impacts on the activities of the working groups as a result of excessive lobbying,
- have appropriately qualified people representing the various parties so as to ensure a high standard of results,
- take a critical look at the individual provisions of the standards with regard to their need, suitability and reasonableness,
- ensure that the four freedoms<sup>12</sup> of the internal market of the European Union, and in particular the free movement of goods pursuant to Article 28 EC<sup>13</sup>, are not restricted in any way as a result of inappropriate formulations.

### Working Group 2

This working group has been mandated to revise the ropeway standards 12929-1:2004, 12929-2:2004 and 12930:2004<sup>14</sup>. For standard 12929-1:2004 alone, almost 200 written objections and suggestions have been received. Some merely require a quick decision, but others involve long and difficult discussions as in the case of anticipated wind and ice loads on operating and stationary installations.

Experience in the working sessions shows that a proposed change to one provision will often involve changes to other provisions, and the latter also have to be discussed even though no proposals have been submitted for those knock-on changes.

After a total of twelve sessions held in the last two years, I can say as chairman of Working Group 2 that the qualifications of the members of the group and their commitment make it possible to process the various objections and proposals in a constructive spirit and to achieve the objectives set for the revision of the standards.

<sup>1</sup> **The internal market** of the European Union was officially created under that name in 1993. Following the enlargement of the European Union to 27 member states, the European internal market is now the world's third biggest common market.

<sup>2</sup> **Making available on the market** means "any supply of a product for distribution, consumption or use on the Community market in the course of a commercial activity, whether in return for payment or free of charge".

<sup>3</sup> Standards can be made mandatory, e.g. through reference to legal or administrative norms by the legislator or issuing body, or on the basis of a legal agreement to that effect.

<sup>4</sup> **EN 45020:2006**, Standardization and related activities – General vocabulary (ISO/IEC Guide 2:2004).

<sup>5</sup> **(13)** In order to make it easier to prove that the essential requirements have been complied with, it is useful to have harmonised European standards, compliance with which enables it to be presumed that the product is in conformity with the said essential requirements. Harmonised European standards are drawn up by private bodies and must retain their non-mandatory status. For this purpose, the European Committee for Standardisation (CEN) and the European Committee for Electrotechnical Standardisation (Cenelec) are recognised as the bodies competent to adopt harmonised standards that follow the general guidelines for cooperation between the Commission and those two bodies signed on 13 November 1984.

<sup>6</sup> **(14)** For the purposes of this Directive, a harmonised standard is a technical specification (European standard or harmonisation document) adopted by one or other of those bodies, or by both, at the request of the Commission pursuant to Directive 98/34/EC of the European Parliament and of the Council of 22 June 1998 laying down a procedure for the provision of information in the field of technical standards and regulations and of rules on information society services and in accordance with the general guidelines referred to above.

<sup>7</sup> **CEN** (European Committee for Standardisation): founded by the national standardization bodies of the member states of the EEC and EFTA in 1961.

<sup>8</sup> **CEN/TC 242**: Safety requirements for passenger transportation by rope

<sup>9</sup> Commission communication in the framework of the implementation of Directive 2000/9/EC of the European Parliament and of the Council relating to cableway installations designed to carry persons (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2009:051:0009:0011:EN:PDF>)

<sup>10</sup> **EN 12408:2004**, Safety requirements for cableway installations designed to carry persons - Quality control

<sup>11</sup> The parties involved comprise companies, universities, consumers, testing institutes and authorities.

<sup>12</sup> Free movement of goods, persons, services and capital

<sup>13</sup> **Article 28 EC** (Treaty establishing the European Community): Quantitative restrictions on imports and all measures having equivalent effect shall be prohibited between Member States.

<sup>14</sup> **EN 12929-1:2004**, Safety requirements for cableway installations designed to carry persons – General requirements – Part 1: Requirements for all installations,

**EN 12929-2:2004**, Safety requirements for cableway installations designed to carry persons – General requirements – Part 2: Additional requirements for reversible bicable aerial ropeways without carrier track brakes,

**EN 12930:2004**, Safety requirements for cableway installations designed to carry persons – Calculations

**Dipl.-Ing. Dr.techn. Peter SEDIVY**

Ropeway expert at the Federal Ministry of Transport, Innovation and Technology

# First 10-passenger gondola in Switzerland

With the successful market launch of the 10-passenger gondolas at the Kronplatz ski resort (Italy) and Kitzbühel (Austria), Leitner has underscored its competence with this type of installation.



Photo: Leitner AG

**Savognin Bergbahnen** will premiere its new facilities in Switzerland for the start of the 2012-13 winter season. The time when mountains were only popular with hikers and skiers is long gone. Winter now attracts increasing numbers of tobogganers, children and users of fun sports equipment in addition to the skiers and snowboarders, all of whom make full use of the cable cars. In summer it's the mountain bikers, families with strollers and fun sports enthusiasts that need transporting. Bearing this in mind, it was important to have an efficient and versatile solution for a new lift. And so the decision was made to order the 10-passenger Leitner gondola. "The contract was awarded to Leitner ropeways simply because it fully covered all requirements and

because it promised to be the first 10-passenger gondola in Switzerland," says Vendelin Coray from Savognin Bergbahnen AG. The new installation, by the name of Tignas-Somtgant, will replace a triple chairlift built in 1984 and a surface lift built in 1962, and will perform a double function as a shuttle ropeway and skier transportation system. In the first stage of development, 2000 passengers per hour will be transported with 38 cabins, to be increased to 2600 passengers per hour in the final design stage. The valley station for the 10-passenger gondola lies at 1600 m, the mountain station at 2100 m. The limited space for the valley station and noise likely to be caused by the planned construction of a restaurant on the roof of the mountain

The first 10-passenger gondola built by Leitner Ropeways in South Tyrol in 2009

station carrier parking facility meant certain other requirements also had to be taken into account. The new 10-passenger gondola meets all these specifications in full.

## TECHNICAL DATA

Contractor	Leitner AG
Client	Savognin Bergbahnen AG
Ropeway system	Monocable gondola detachable, GD 10
Line length	1,638 m
Vertical height	511 m
Capacity	2,000 p/h initially (final design capacity 2,600 p/h)
Number of cabins	38 (49) for 10 persons each
Journey time	4.6 min

# Automatic people mover for Cairo international Airport

Sigma – from the skyscrapers of New York to the foot of the Pyramids.

**Following construction** of the funicular serving the Mendel in South Tyrol, Sigma is again consolidating its position on the market for large cars for track-based transportation systems: The cabin manufacturing arm of the Leitner-Poma group is about to complete production of two APM trainsets for Cairo international Airport.

Sigma has a convincing track record of cabin and car engineering in all categories of rope-hauled transportation systems:

- the famous Diamond family of cabins for between 4 and 20 passengers,
- the round cabins in the Ruby family,
- the bigger Saphir cabins (for 35 passengers),
- the Crystal tramway cabins (for 50, 80 or 110 passengers), and
- funicular cars and APMs.

Plus a string of special projects including the ferris wheel cabins delivered to the London Eye, the viewing platform on the wind turbine in Vancouver, etc.

The APM cars for Cairo, which are wholly designed and engineered by Sigma, comprise



Photo: Sigma

A Sigma car for the Cairo APM

two driverless 3-car trainsets with flexible gangway connections. Each trainset is 28 meters long, weighs 33 tons and can carry 250

passengers. Two automatic sliding doors on each side of the cars ensure fast and convenient loading and unloading.

## IMPRESSUM/IMPRINT

**Medieninhaber (Verleger) ● Owner:** Bohmann Druck und Verlag, Gesellschaft m.b.H. & Co. KG, A-1110 Wien, Leberstraße 122, Telefon: +43(1)740 95-0, Telefax: +43(1)740 95-537, DVR 0408689

**Herausgeber ● Publisher:** Komm.-Rat Dr. Rudolf Bohmann

**Geschäftsleitung ● Managing directors:** Mag. Dr. Gabriele Ambros, Gerhard Milletich

**Verlagsleitung ● Management:** Mag. Dr. Gabriele Ambros, Mag. (FH) Patrick Lenhart

**Redaktion ● Editorial staff:** Chefredakteur Mag. (FH) Josef Schramm (JS); Leitender Redakteur Mag. Christian Amtmann (CA); Fachtechn. Redakteur Univ.-Prof. Dipl.-Ing. Dr. techn. Josef Nejez (JN);

Redaktionsassistentin & Anzeigenverwaltung Birgit Holzer; E-Mail: isr.zv@bohmann.at, Internet: www.isr.at

**Anzeigenverkauf ● Advertisement sales:** Mag. (FH) Josef Schramm, Dietrich Kops

**Layout & electronic Publishing:** Markus Frühwirth

**Umwelt ● Environment:** Dipl.-Ing. Dr. Maria Nejez, Landschaftsarchitektin

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**Autorisierte Übersetzer ● Translation:** Dr. Chris Marsh (E), Andrée Pazmandy Lic. és. L. (F), Federico Dalpiaz (ES), Mag. Hubert Rinner (IT)

**Vertriebsleitung ● Dispatch manager:** Angelika Stola, Tel.: +43/1/740 95-462, Erscheint 6 mal jährlich/published 6 times a year

**Abonnementverwaltung ● Subscriptions:** abo@bohmann.at

**Inland ● Austria:** Einzelpreis: € 19,95; Jahresbezugspreis: € 109,90 (inkl. 10 % MwSt).

**Ausland ● Other countries:** Einzelpreis/single issue: € 23,30; Jahresbezugspreis/6 issues/year: € 130,00 (inkl. MwSt, inkl. Porto u. Versandkosten).

Die Abonnementgebühr ist im Voraus zu entrichten. Das Abonnement ist spätestens 30 Tage vor Bezugsjahresende schriftlich kündbar.

**Bankverbindungen ● Bank accounts:** Bank Austria Creditanstalt AG 653-092-700; Österr. Postsparkasse 1732.755

**Druck ● Print:** AV + Astoria Druckzentrum, A-1030 Wien, Faradaygasse 6, **Druckauflage 1. Halbjahr 2011 ● Circulation 1st half-year 2011:** 6.500



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P D N PARTNER



UMWELTZEICHEN

# An added stimulus for Czech winter tourism

Leitner Ropeways are to build a gondola to serve Sněžka in the Krkonoše mountains.

**As of 2014**, the highest peak in the Czech Republic will be served by a ropeway from the house of Leitner. Together with the Czech contractor BAK, Leitner is building a new 4-passenger gondola to the top of the 1602 m high mountain. For the South Tyrolean company this is an important contract as the popular peak is one of the country's major tourist attractions.

At 1602 meters, Sněžka is one of the highest peaks in the Krkonoše mountains and the whole of the Czech Republic. Over the centuries the mountain has become one of the country's biggest tourist attractions. It is said to have been first climbed by a Venetian merchant prospecting for gemstones in 1456. Prussian kings and the later US President John Quincy Adams also made it to the summit. Today the mountain on the border between the Czech Republic and Poland, with its meteorological observatory, its famous post office, the Chapel of St. Lawrence and its eateries, is one of the most popular goals for excursions in the region.

Sněžka is a busy destination both summer and winter, and the high visitor totals make construction of the new ropeway a logical decision. Following a public tender procedure, Leitner Ropeways and the Czech contractor BAK were awarded the contract worth a total of about 13 million euros for construction of a 4-passenger gondola with a line length of 3.7 km. The client is the Czech municipal authority of Pec pod Sněžkou.

## New gondola to be commissioned in March 2014

The new gondola, which is expected to go into service in March 2014, will run from Pec pod Sněžkou to the top of Sněžka in two stages. At a line speed of 5 m/s, the cabins will take just under 13 minutes to reach the



Photo: Leitner AG

Signing the contract (from the left): Oliver Kirchheim, Sales Manager of Leitner Ropeways, Alan Tomášek, Mayor of Pec pod Sněžkou, Dušan Čížek, CEO of BAK

mountain lodge at the summit. The new gondola will have the looks of the 60-year-old installation it is replacing, with identically designed towers standing on the original line.

For Leitner Ropeways, the contract is of strategic importance. Sněžka is a big tourist

attraction in the Czech Republic, and the ropeway has a long tradition and is the most important ropeway in the Krkonoše mountains. "So the new installation could become a valuable reference for follow-up orders," says Oliver Kirchheim, Sales Manager of Leitner Ropeways.

## TECHNICAL DATA

### 4-PASSENGER GONDOLA IN PEC POD SNĚŽKOU

	1st stage	2nd stage
Line length	1743 m	2008 m
Vertical height	510 m	295 m
No. of towers	17	18
No. of carriers	15	17
Line speed	5.0 m/s	5.0 m/s
Transit time	5.9 min	6.7 min
Rated capacity	250 P/h	250 P/h

# Austrian expertise for new ski areas in the Northern Caucasus

## Axess and Northern Caucasus Resorts sign a cooperation agreement

**Austrian expertise** is highly sought after in Russia. From winter resort planning to cable car construction, the Russians place their trust in the expertise of Austrian specialists.

With a 15 billion dollar investment program, the Russian government intends to establish five new ski areas in the Northern Caucasus by 2020. For the necessary point-of-sale and access control systems, they are calling on the know-how and experience of the Salzburg-based company Axess AG. Axess and the Russian state-owned management company NCRC signed an agreement to this effect at the InterAlpin 2011 international trade show.

Axess began establishing contacts in Russia as far back as 1999, and the first contracts followed in 2000. Since then, the company has continually consolidated its market position. Axess systems have already been supplied to Sochi for the 2014 Winter Olympics, the Laura Mountain Ski Center owned by Gazprom, and the Roza Khutor Ski Area, both in the Krasnaya Polyana region, among others. Axess systems were also deployed at the 2011 Biathlon World Championships in the Siberian resort of Khanty-Mansiysk.

## Continuous presence pays dividends

Axess' longstanding commitment and excellent references also convinced NCRC that it had found the right partner for the development project in the Northern Caucasus.

In the course of the InterAlpin trade fair, Axess and NCRC signed an agreement covering collaboration in the planning, evaluation, and installation of electronic point-of-sale and access control systems for five new ski regions in the Northern Caucasus.

The project – named Peak 5642 – will transform the largely undeveloped Caucasian mountains into a world-class holiday destination. The development area extends over 1200 km along the Northern Caucasus, from the Black Sea in the west to the Caspian Sea in the east.

The proximity of the region to Asia means that it will be able to serve a large and rapidly expanding mountain tourism market. The long winters (200 days), large quantities of snow, natural mineral springs and breathtaking countryside will more than satisfy the expectations of Russian and other holiday-makers.

The NCRC management company, a newly created state enterprise, has been appointed by the Russian government to implement the 15 billion dollar investment program. NCRC is responsible for attracting and managing investments in the infrastructure and tourism activities in the five new holiday regions.

"Those who hope for quick returns in Russia normally end up disappointed. Even more so than in the west, sustained trust and a long-term presence are crucial for business success," reports Axess CEO Wolfram Koczmar in the light of his experience in the country. "The agreement with NCRC is an acknowledgment of our continuous work in recent years in Russia."



Photos: Axess

Wolfram Koczmar, CEO of Axess AG (r), and Juri Karpenko, deputy director general for project development at the Russian state enterprise NCRC (l), at the signing of the cooperation agreement



Axess flap gates are also highly sought after in Russia.

# Taris starts at Interalpin

CWA scores with a new cabin for tricable ropeway systems.

Whereas CWA's new Taris cabin was still hidden under a red cloth in ISR 2/2011 (p. 28, German edition), at the Interalpin trade show in Innsbruck it was the biggest item and crowd-puller in the CWA offering, which this year formed part of the Doppelmayr stand. The new cabin, which is designed to carry about thirty passengers, has been developed with tricable ropeway systems in mind.

One of the main features of the new Taris is its modular design, with a variety of interiors available for a wide range of applications, e.g. mountain or urban transport systems. This relates not only to the choice of configurations for seated and standing passengers but also to the design of the seats themselves and such details as ski holders integrated in the cabin floor. The optionals also include modern passenger information systems with ceiling-level screens – a feature that is particularly important for public transport systems in the urban environment.

## Taris cabins for Ischgl

And where will the Taris be making its debut? – Probably on the new Pardatschgratbahn in Ischgl in the Austrian Tyrol. The plans for the new high-powered 3S-Bahn have already been submitted to the authority for approval, and the system is expected to be up and running in the 2012/13 winter season. At present a two-stage gondola links Ischgl with Pardatschgrat, and this access system is to be replaced by the new 3S-Bahn. The first stage of the existing gondola will become surplus to requirements and will be dismantled, but the second stage will continue to operate as a repeat-ride installation. The new 3S-Bahn will handle no less than 1,270 meters of vertical and have a line length of 3,500 meters. Rated capacity is 2,800 P/h at a line speed of 7.5 m/s. The Taris cabins in Ischgl will carry 28 passengers, all of them seated – for maximum comfort on the mountain!

JN



The new Taris was the eye-catcher at the CWA stand.

The Taris model on show at Interalpin was fitted with a combination of different versions of seats plus ski holders in the cabin floor.



Photos: J. Nejez



# 10-seater aerial cableway with forked line

The Jungfrau Railways Group has devised a concept for future access to Männlichen and Kleine Scheidegg. In collaboration with Gondelbahn Grindelwald Männlichen AG (GGM), the company wants to build a Y-shaped aerial cableway equipped with 10-seater gondolas as a replacement for the existing aerial cableway between Grindelwald Grund and Männlichen.

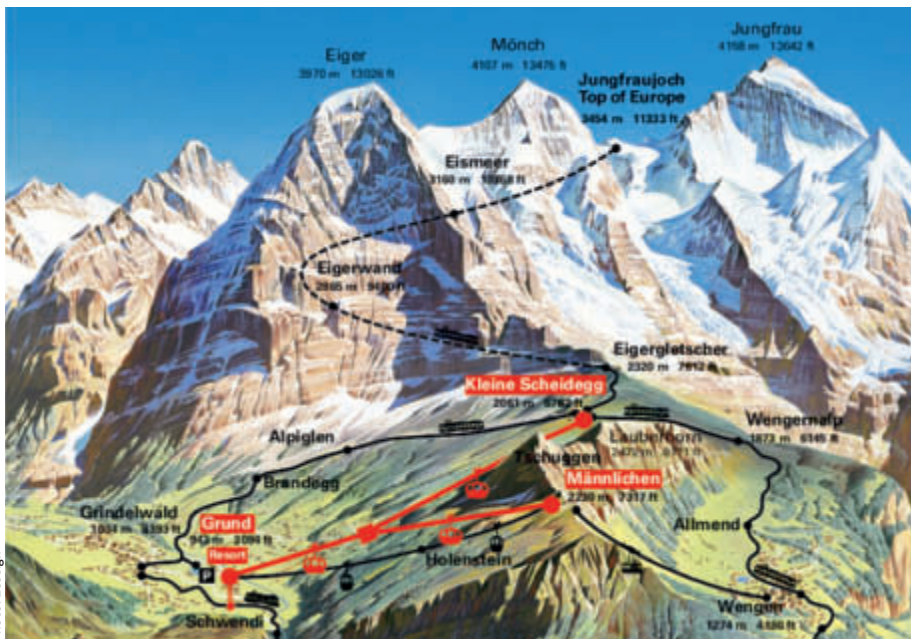


Photo: Ecosign

**Thanks to a fork** in the line, the new 10-seater gondola will be able to transport passengers to both Männlichen and Kleine Scheidegg, with the destination to be chosen when boarding at the bottom station in Grindelwald Grund. It is also planned to build another station for the Bernese Oberland Railway (BOB) in the Rotheneegg area. This will create a link to the bottom station of the 10-seater gondola cableway, with a conveyor system providing transport between the two. The Jungfrau Railways Group puts total construction costs for the new aerial cableway and station at around 80 million Swiss francs. The project is based on a study produced by Ecosign Mountain Resort Planners Ltd. for the municipalities of Grindelwald and Lauterbrunnen plus the mountain transport companies in the Jungfrau Region. Amongst other things, the study concludes that it currently takes too long to fill the

Männlichen-Kleine Scheidegg ski region. It also reveals that the region must make access to the ski region easier and more comfortable in order to gain a competitive edge. Capacity will thus be increased, with the new aerial cableway capable of transporting up to 3600 persons per hour. Furthermore, transit time by public transport between Interlaken and Kleine Scheidegg or Männlichen will be cut by 30 minutes. It will therefore be possible to reach the top stations from Bern in two hours and from Zurich in three. In addition, an investor is planning to create a resort near the bottom station of the new aerial cableway with 500 commercially managed beds. That will tackle another problem in the Jungfrau Region – an increasing shortage of beds. The Jungfrau Railways Group owns 28 per cent of GGM's share capital. The group has no intention of pursuing a merger between the

two companies. GGM has been invited to make a joint examination of the project. An information event for the landowners involved and residents of Grindelwald will be held on 16 August 2011. The aim is for the new 10-seater aerial cableway to go into service in the 2015/2016 winter season.

## BACKGROUND

In October, 2009, Ecosign Mountain Resort Planners Ltd. were retained by the municipalities of Grindelwald and Lauterbrunnen and the four lift companies in the Jungfrau Region of Switzerland to make a technical assessment of the Jungfrau Ski Region and prepare alternative master plan concepts for future development in the region. The Jungfrau Ski Region comprises three ski areas and the resorts of Grindelwald, Wengen, Lauterbrunnen and Mürren. Ecosign completed a detailed inventory and analysis of the Grindelwald First, Männlichen - Kleine Scheidegg and Mürren - Schilthorn ski areas and valley staging areas, followed by two plans for each zone including substantial improvements to the traffic, transportation and land use in the community of Grindelwald. While the various refurbishment and upgrade proposals made by Ecosign are currently under review by the ski area managements and local municipalities, the Jungfrau Railways Group has recently decided to proceed with one of Ecosign's major recommendations to install a new high-speed gondola system in a Y configuration to provide comfortable transportation to both the Kleine Scheidegg and Männlichen ski areas.

## Presenting: the world's first double-decker cabriolet carrier ...

In the framework of the 2011 season opener at Stanserhorn, a presentation was made of the carriers planned for the new Cabrio-Bahn, which will go into service as a replacement for the existing Kälti - Stanserhorn jigback at the beginning of the 2012 season. The contract for the exciting cabriolet carriers was awarded to the Bernese Gangloff company.

**ISR 5/2009 included** a detailed report on the subject of the innovative Cabrio-Bahn ropeway system developed by Garaventa to permit the use of double-decker carriers with an open top deck.

For an installation offering such spectacular views as the ropeway serving Stanserhorn, a carrier with an open top deck is obviously a big attraction. But that is not feasible with a conventional jigback design because the carrier is located beneath the carriage and the track and haul ropes. To solve the problem, it was decided to design a wide-gage line with the twin track ropes so far apart that there is enough room for the carrier to travel between them and to mount a carriage on either side of the carrier. The fact that the carrier travels between instead of below the track ropes distinguishes the new ropeway from a Funifor, which is also a wide-gage reversible system. The carriers on the new Cabrio-Bahn accordingly have no hangers. Instead, they have a carriage mounted on either side of a frame, which supports the self-leveling double-decker structure. With regard to the haul rope, the original idea of using a single haul rope loop located in the middle of the line was finally rejected by Garaventa's design engineers in favor of a solution involving double loops for the haul and ballast ropes with the ropes located beneath the track ropes. As in the case of the Funifor system, deflection sheaves are used as a kind of moving anchor to attach the carriers to the haul rope. Among other things, that solves the problem of potential oscillation in the rope spans caused by excessive haul rope lift on the tower rope sheaves.

### Exclusive Gangloff design

The engineering that goes into such an innovative ropeway carrier is one thing, the design another, all the more so as passengers are only indirectly aware of the engineering at best while the design is something they cannot miss. And the design is an aspect where the Gangloff team really made their mark: The clean lines and the elegant white metallic finish are the perfect match to the futuristic character of the Cabrio-Bahn. In this context Jürg Balsiger, General Manager at Stanserhorn-Bahn, likes to stress the similarity with the looks of the Apollo moon rocket and thus the analogy to manned space travel. In addition, quite apart from the open top deck, the generous use of glass will give passengers unrestricted views of the mountains. "We are very happy about the all-over glazing chosen for the cabin. This means we can offer visitors a unique ride with a sense of sailing through the air," says Jürg Balsiger in his assessment of the new carriers, which were ordered from Gangloff on 21 December 2010. The agreed delivery date is 15 December 2011.



Rendering of the carrier for the new Cabrio-Bahn – in the exciting Gangloff design!

Construction work on the Cabrio-Bahn has already begun. As Jürg Balsiger explains, "Thanks to good planning for the construction period, we are in a position to offer visitors a hassle-free ride and a wonderful mountain experience this year. It is the last opportunity to ride up to Stanserhorn in the old yellow cabins with the famous floral motif." The new Cabrio-Bahn will be ready to open the 2012 season on May 1. *JV*



Marc Pfister, Gangloff's CEO, presenting the world's first double-decker cabriolet carrier at this year's Interalp in Innsbruck

# No-strings mountain advertising frame

Mountains stand for wide open spaces and freedom. But how free are the local operators when it comes to advertising? This question was the point of departure for the development of a new frame system for use in ski areas and winter resorts called „snaps-Mountain“.

**The winters** are becoming warmer and the snow scarcer, and sunshine destinations are competing more and more with the traditional winter holiday resorts. There are many reasons why an attractive mountain backcloth and fresh air alone are not enough to keep the visitors coming. So it is all the more important for winter resort businesses to be able to react quickly and easily to promote their products and services through local advertising. But that presupposes advertising space that is both available and affordable.

„snaps-Mountain“ is the name of a new advertising poster frame for convenient use in the mountain environment. „snaps-Mountain“ gives every business access to effective, appropriate and independent advertising.

## Freedom of choice

The „snaps-Mountain“ system is available without any contractual ties or other obligations. In other words, the frame belongs to the operator for him to use as he pleases. Whether he chooses to use it all for his own local advertising or to sell some of the space to third party businesses is entirely up to him.

Another advantage of the „snaps-Mountain“ system relates to the posters and the question of who prints them. Here again – as opposed to other systems – the owner of the frame is free to decide. He is not tied by any contract, which means he can have his posters printed where he wants.

Thanks to these two freedoms of choice – relating to use of the frame and sourcing the posters – the „snaps-Mountain“ system offers businesses in mountain regions a convincing alternative with fair conditions.

## Fast installation and quick change

The „snaps-Mountain“ frame is designed for placement and use in the harsh mountain environment with a focus on safe and easy installation. The frame is made of high-grade aluminum with practical snap profiles for quick and easy changing of the all-weather lightweight posters. The system is ideal for use with hollow sheet posters, for example, which are absolutely weather-proof and 100% recyclable.

Of course, the „snaps-Mountain“ frame is not only suitable for winter operations. Nowadays more and more ski areas also have a summer offering. Ropeway operators, hotels and other businesses are investing in a wide range of recreational activities, like mountain walks, mountain bike trails and summer slides, and these amenities also need to be advertised.

## A tough case

Prior to the market launch, the „snaps-Mountain“ frame was tested under extremely harsh conditions. The result is a highly robust product offering extra stability and long service life – in other words, an advertising frame made for the mountains.

The system is designed for use with DIN A1 hollow sheet posters made of polypropylene and printed with high-grade UV inks for added fade resistance.

Hollow sheet posters for use with the „snaps-Mountain“ frame are available at reasonable



Pictogram: „snaps-Mountain“

The new „snaps-Mountain“ frame system for mountain and winter resort locations

prices from the Swiss online printer Flyerline. They can be ordered from [www.allwetterleichtplakat.ch](http://www.allwetterleichtplakat.ch).

To conclude, in combination with all-weather lightweight posters, the „snaps-Mountain“ system is suitable for all-year use as a cost-effective alternative to conventional outdoor advertising solutions.

## FACTS & FIGURES

### „snaps-Mountain“

- frame system for DIN A1 posters
- no contractual ties for poster sourcing
- no restrictions on the use of the frame
- for own and/or third-party advertising
- unbeatable prices
- long service life in outdoor locations
- lightweight design
- easy to install the frame and change the posters
- weather-proof and 100% recyclable posters

More information on the „snaps-Mountain“ frame is available from [www.snaps.ch](http://www.snaps.ch)

## PEAK 5642 – an era of new achievements opens for the Northern Caucasus



A \$15 billion investment program created by the Russian Federal Government to develop five new mountain resorts aims to turn the Caucasus into a world-class tourism destination.

### Building a new future of peace through sport and tourism development

**Russia's leadership** recognizes that the great skiing regions of the world, such as the Alps in Europe and the Rockies in North America, are economic engines for their mountain communities and neighboring states. But it is clear that it takes a critical mass of major resorts to attract millions of tourists and create the foundations necessary for the enduring traditions of the hospitality industry.

With its commitment to steer investments of \$15 billion into five world-class resorts across the Northern Caucasus, Russia is building a new tomorrow for the region and its people: striving to overcome a history of conflict through the promise of a future of opportunity and peace.

More than 160,000 new jobs will be created through this development over the next decade. The Russian Federation will begin major transportation and accommodation infrastructure investments in 2012.

The extraordinary beauty of the Northern Caucasus is a national treasure that is about to be opened up for the benefit of the people living in the region. The world-class mountain sports resorts envisioned in this range will fill the hills, the forests, the canyons, the rivers and the valleys of this magnificent territory with a new spirit of hope.

Parts of the Caucasus have endured years of armed conflict and terror-

ist activity, which have led to under-investment in the region, unemployment and emigration. It is hoped that the Peak 5642 project will contribute significantly to a turnaround in the regional economy, which will bring social benefits and stability.

***“Peak 5642 is going to transform the Caucasus. It will show how we can beat poverty and terrorism with tourism. In 2014 the world will descend on Sochi, and we want the world to keep coming back,”***

*said President Medvedev at the World Economic Forum in Davos in January 2011.*

The development zone for the project extends 1,200 km along the Northern Caucasus, from the Black Sea, with Lagonaki, the westernmost resort only 40 km from the coastline, to Arhyz, Elbrus Besengi, Mamison and Matlas, 80 km west of the Caspian Sea.

The region's proximity to Asia means it is becoming increasingly attractive to a large and fast-growing market of mountain tourists, while its 200-day winters, plentiful snow, natural spas and stunning scenery can fulfill expectations of both Russian and international holiday-makers. As Akhmed Bilalov, Vice-President of the Russian Olympic Committee, explained in Davos: “EU construction standards will mean more

competitive bidding for contracts and better value for money for investors, and help open up the Caucasus to foreign companies. We want to create one of the world's top mountain tourism destinations. To do this we need to work with the best companies in the world.”

To attract and manage investment in infrastructure and businesses in five new resort areas, the Northern Caucasus Resorts Company (NCRC) has been incorporated. The Russian Federal Government has established the region as a Special Economic Zone, with a preferential tax, customs and visa regime for foreign workers.

With the planned investment, visitors are expected to number 5 million by 2020, up from one million today. They are expected to come predominantly from Russia and the Commonwealth of Independent States (CIS), and also from Turkey, Iran, the Middle East and Eastern Europe. Domestic skiers will be the initial target market, since the sport is becoming increasingly popular in Russia, albeit from a very low base: less than 2% of Russians currently ski.

**About the Northern Caucasus Resorts Company (NCRC)**

The Northern Caucasus Resorts Company is a public limited company charged by the Russian Federal Ministry of Economic Development with implementing the Peak 5642 project comprising five mountain resorts in the Northern Caucasus. The company has three principal shareholders: the Russian government (via its Special Economic Zones Agency), Sberbank and VEB (Vneshekonombank).



Photos: SMC Ltd.

The second highest skiing area in Europe is planned for Mount Elbrus, Europe's highest mountain



**THE LARGEST MOUNTAIN  
TOURISM PROJECT  
IN THE WORLD**

[www.ncrc.ru](http://www.ncrc.ru)



# The 2011 O.I.T.A.F. Congress program



Photo: OITAF.ORG

What's on the agenda at this year's 10th O.I.T.A.F. Congress in Rio de Janeiro?

**The last few issues** of ISR have included a general overview of the objectives set and topics chosen for the 10th O.I.T.A.F. Congress in Rio de Janeiro. Now the final convention program is ready, complete with the various social activities.

The basics first: the Congress is being held in the intermediate Urca station of the Sugarloaf Mountain Cable Car from 24 to 27 October 2011. The congress languages are English, French, German, Portuguese and Spanish. For information on registration, the supporting program, excursions, etc., go to the congress websites at <http://www.oitaf2011.com.br/> and [www.oitaf.org](http://www.oitaf.org).

The motto of this year's congress is "safe, environmentally friendly, with success in the future".

## Monday, October 24, 2011

Afternoon: Registration of attendees and collection of conference folders (plus General Assembly for members of O.I.T.A.F.)

Evening: Welcoming cocktails at Urca intermediate station

## Tuesday, October 25, 2011

Morning: Registration of attendees and collection of conference folders

9.30 a.m. Opening of congress

10.30 a.m. (after the opening session): **1st working session, "ROPE DRIVEN TRANSPORTATION IN URBAN SETTLEMENTS"**

Moderator: Josef Nejez

### Papers:

"**Future prospects of rope driven urban transportation**", Michael Potier – chargé d'études aménagement transport – Centre d'Etudes Techniques de l'Equipement de Lyon – Lyon – France

"**New concepts of urban transportation, as shown by the example of the 8-MGD San Agustín in Caracas, Venezuela**", Doppelmayr/Garaventa – Rudolph Andreas and Operator

"**Mini Metro, Perugia, Italy – Increasing acceptance of the cableway installations for urban transport**", Leitner/Poma – Ermenegildo Zordan and operator of the cableway installation

"**2 million passengers in 6 months: The 3S BUGA ropeway in Koblenz - A story of success**", Doppelmayr/Garaventa – Reinhard Fritz

12.30 – 2 p.m. Break for lunch

### Papers:

"**Cable Liner Shuttle: The intelligent solution for urban traffic as shown by using the example of the People Mover in Venice and other successful projects**", Doppelmayr/Garaventa – Thomas Pichler

"**Medellin, Colombia – Report about the social effects of cableway installations for urban transport**" Leitner/Poma – Bouvier Christian and operator of the cableway installation

"**Algeria: Four ropeways, are already in service in urban areas**", Doppelmayr/Garaventa – Peter Baumann and Operator

4 p.m. **2nd working session, "TRANSPORTATION BY ROPE AND TOURISM"** moderator: Jörg Schröttner

### Papers:

"**The significant support given by ropeways to secure a positive and lasting regional development of mountainous regions**", Christian Buermann (lecturer), Raphael Schönbacher – Association public traffic – Swiss ropeway – Bern – Switzerland

"**World overview of ski resorts**", Laurent Vanat – Laurent Vanat Consulting SARL – Geneva – Switzerland

"**Multifunctionality and potential for cable transport in South America**", Francisco Sotomayor – Pro Andes Institute – Santiago – Chile

"**The present situation of ropeway construction and key assessment indicators in China**", Zhang Qiang – Executive Vice director, National Centre of Passenger Aerial Ropeway Safety Supervision and Inspection – Peking – China

Break

"**Ropeways in North America – impacts, benefits and outlook**", Jim Fletcher, P.E. – Engineering Specialties Group – Boulder CO – USA

"**The European ski resorts: the challenge of the future**", Laurent Reynaud – Domaines skiabiles de France – Francin – France

End of the session: approx. 6 p.m.

Evening: Folklore evening

## Wednesday, October 26, 2011

Morning: Visit to the Morro do Alum cable car

Afternoon: city tour

Evening: free

## Thursday, October 27, 2011

8.30 a.m. Presentation of papers concerning the Pão de Açúcar cableway moderator: Ercilia Leite de Castro

### Papers:

"**The Sugar Loaf panoramic cable cars**" Achille Bonini – ropeways consulting engineer – Rome – Italy

"**Aerial transportation system for water conduits and sewage drains**", Diego Scofano / Giuseppe Pellegrini – Cia. Caminho Aéreo Pão de Açúcar – Rio de Janeiro – Brazil

9 – 10.15 a.m. Visit to the Pão de Açúcar cableway

10.30 a.m. **3rd working session, “SUSTAINABILITY OF TRANSPORTATION BY ROPE, ENVIRONMENTAL AND SOCIAL ASPECTS, ECONOMIC EFFICIENCY”** moderator: Julien Noël

**Papers:**

“**Sustainability of ropeway engineering**”, Andreas Brandner – Chartered Consulting Engineer – Innsbruck – Austria

“**Sustainability of ski resorts**”, Kurt Ramskogler – Lieco – Kalwang – Austria

“**Energy management**”, Erich Megert – SIS-AG – Altdorf – Switzerland

Break

“**Integration of a ropeway in a town**”, Denis Creissels – Creissels Technologies – Meylan – France

“**Urban gondolas, aerial ropeways and public transportation: Past mistakes & future strategies**”, Ryan O’Connor (lecturer) & Steven Dale - Planning consultants – Wellington - New Zealand

“**Aerial tramway: architecture for design and sustainability**”, Laura Kienbach – Leibniz Universität Hannover – Hannover – Germany  
1 – 2.30 p.m. Break for lunch

2.30 p.m. **4th working session, “TECHNOLOGY AND SAFETY”** moderator: Peter Sedivy

**Papers:**

“**Analysis of the track rope life of a bicable continuous material handling ropeway**”, Giorgio Graziano – ropeways consulting engineer – Turin – Italy

“**New calculation methods for rope lines**”, David Pataraiia – Professor at the Georgian Technical University – Tbilisi – Georgia

“**Taking advantage of possibilities offered by Excel to assess rescue plans for the recovery of ropeway passengers**”, Philippe Balzer – risk-management consultant – Toulouse – France

“**Human error: The cause of incidents**”, Gábor Oplatka – Prof. em. Dr. Dr. h.c. ETH – Zürich – Switzerland

Break

“**The latest technological developments for ropeway installations in urban areas and innovative concepts for ski resorts**”, Leitner/Poma

“**Ropeway engineering and safety in the urban context and for winter applications**”, Doppelmayr/Garaventa

5.50 p.m. Closure and leave-taking

Evening: Gala evening

# One-stop shopping for winter technology

Under the umbrella of the Leitner group:  
Demac-Lenko – new organization, new logo

**Demac-Lenko** has a new Board of Directors and a new logo. Together with South Tyrol-based snowmaker Demac, the Leitner group has acquired 100 percent of the Swedish company Lenko, a global player in the artificial snowmaking industry, as well as its subsidiaries in Austria, Italy, the United States and Canada. This new partnership means the whole range of winter technology products will be offered under one roof and customers’ needs will be met more efficiently. Furthermore, the most important elements of the organizational structure of Demac-Lenko are now in place. Martin Leitner, Member of the Board of the Leitner group with responsibility for the global distribution of Leitner ropeways, takes on the role of Chairman of the Board, Roland Demetz is in charge of both R&D and Production, and Andreas Dorfmann, former manager of the Kronplatz Ski Resort in South Tyrol, joins the board and will be responsible for Marketing and Sales at Demac-Lenko.



From the left: the new management team at Demac-Lenko: Andreas Dorfmann, Martin Leitner and Roland Demetz



The new Demac-Lenko logo

## TUBBY SLOPES

# Great success with four new Tubby slopes

Neveplast installs a new attraction at Tarzanija Adventure Park.

**Alytus** is a medium-sized Lithuanian town located 90 minutes by car from the capital Vilnius. The road to Alytus passes through really fascinating scenery, where thick forests alternate with lakes large and small. The town lies on the River Neman, on whose banks the country's first adventure park opened four years ago, namely Tarzanija, which is run by its founders Giedre and Mindaugas Aldonis.

In view of the park's growing attendance and the resulting need for further development, the proprietors decided to increase the range of attractions and started looking for something that would appeal to a target group that goes from young children to adults.

With reference to a slope that starts next to the entrance to the park and ends on the flat before reaching the river bank, Neveplast was contacted to determine whether it would be

possible to create a number of snow tubing runs with varied characteristics. The area was found to be particularly suitable for the purpose, and – following a detailed planning phase involving a positive dialogue between Neveplast and the management, four Tubby slopes were installed in May 2011.

One of the design objectives was to install four different types of runs: from the slowest on the gentle side of the slope to the fastest on the steep side. The runs also vary between straight sections and parabolic turns, so that the right emotions are guaranteed for everybody.

Tarzanija's management was particularly impressed by the proposal to implement an innovative feature in the form of a straight Tubby slope with a kicker to launch the snow tubes through the air at a height of four to six meters before they land on a big air mattress.



Photo: Neveplast

Four new Tubby slopes for Tarzanija Adventure Park

In the central area of the new park, a carpet lift has been installed to carry visitors to the top in complete comfort.

The new facility, which has been built with Tubby Evolution runs, was inaugurated on June 4th and, thanks to the above features, has proved a great success from the start.

## SNOWMAKING

# Healthy order books

Johnson Controls consolidate their position on the snowmaking market.

**The operator** of Kubínska Hol'a Ski Area (Oravská Magura Mountains, Slovakia) has chosen Johnson Controls Neige (JCN) to upgrade its existing snowmaking installation. The contract relates to a 1000-meter-plus extension of the system at the upper levels of the ski area, the addition of a booster station and a redesign of the primary pumping station.

The extension to serve the higher sections of the ski trails in Kubínska Hol'a requires placement of about twenty snowmaking shelters. The snow guns chosen for the project are primarily Rubis Evolution R10 plus some Borax B6 lances, all of them controlled by YB valves. The capacity of the water supply will be increased with the construction of a new pumping station to feed the existing snowmaking reservoir, while a booster station will be added to supply the new top sector.

The snowmaking system upgrade project at Kubínska Hol'a is a reflection of the good re-

lationship that exists between the ski area operator and JCN, who also handled the first phase of development of the Kubínska Hol'a snowmaking system.

With a total of 21 snowmaking systems in place, JCN has built up an impressive presence on the Slovak market. The first JCN system was installed in Jasna in 1997, and that is also the subject of an upgrade project being handled with JCN this year, involving the installation over 3,600 meters of additional lines for snowmaking on the higher slopes and the placement of 53 automatic snowmaking shelters with 20 Rubis Evo R6, 16 Rubis Evo R10, 14 Borax and 3 Safyr snowguns. A booster station will also be built to handle the water supply to the new sections of the snowmaking system. The system extension is needed to give the ski area operator the necessary snowmaking capability on new trails served by a ropeway now under construction.



Photo: Johnson Controls

This year Johnson Controls are adding an extra 1,000 meters of lines to the snowmaking system at Kubínska Hol'a Ski Area.